

ATENT COOPERATION TRUST

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PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C.20231
 ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

| | |
|--|---|
| Date of mailing (day/month/year) 29 February 2000 (29.02.00) | To: Assistant Commissioner for Patents United States Patent and Trademark Office Box PCT Washington, D.C.20231 ÉTATS-UNIS D'AMÉRIQUE in its capacity as elected Office |
| International application No. PCT/US99/11585 | Applicant's or agent's file reference PCT 20193 |
| International filing date (day/month/year) 26 May 1999 (26.05.99) | Priority date (day/month/year) 29 May 1998 (29.05.98) |
| Applicant EL-SHERBEINI, Mohamed et al | |

1. The designated Office is hereby notified of its election made:

 in the demand filed with the International Preliminary Examining Authority on:

16 December 1999 (16.12.99)

 in a notice effecting later election filed with the International Bureau on:

2. The election was was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

| | |
|---|---|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35 | Authorized officer Kiwa Mpay Telephone No.: (41-22) 338.83.38 |
|---|---|

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To: MICHAEL D. YABLONSKY
 MERCK & CO., INC.
 126 EAST LINCOLN AVENUE
 RAHWAY, NJ 07065-0907

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NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing
 (day/month/year)

02 NOV 2000

| | | | |
|--|---|---|--|
| Applicant's or agent's file reference 20193-PCT | | IMPORTANT NOTIFICATION | |
| International application No. PCT/US99/11585 | International filing date (day/month/year) 26 MAY 1999 | Priority Date (day/month/year) 29 MAY 1998 | |
| Applicant MERCK & CO. INC. | | | |

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

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|--|---|
| Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230 | Authorized officer LYNETTE SMITH Telephone No. (703) 308-0196 |
|--|---|

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

| | | | | | | | |
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| DE | Germany | LK | Sri Lanka | SE | Sweden | | |
| DK | Denmark | LR | Liberia | SG | Singapore | | |
| EE | Estonia | | | | | | |

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US99/11585

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :Please See Extra Sheet.

U.S. Cl. - Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

R. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/184.1, 234.1, 260.1; 435/252.3, 252.34, 320.1, 69.1, 71.1, 71.2, 172.1, 172.3; 536/23.1, 23.2, 23.7

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

ABS DIALOG STN

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|--|--|-----------------------|
| X | US 5,681,694 A (HOSKINS et al) 28 October 1997. See especially Abstract; claim 1; column 11) | 1-3, 5-8 |
| ----- | | ----- |
| Y | | 9, 11-14 |
| X | MENGIN-LECREULX, D. et al. Nucleotide Sequence of the murD | 1-3, 7, 8 |
| | gene encoding the UDP-MurNAc-L-Ala-D-Glu synthetase of | |
| Escherichia coli. Nucleic Acids Research. 1990, Vol. 18, No 1, | | |
| page 183, entire document. | | |
| X | IKEDA, M. et al. Nucleotide Sequence Involving murD and an | 1-3, 7, 8 |
| | Open Reading Frame ORF-Y Spacing murF and ftsW in Escherichia | |
| coli. Nucleic Acids Research. 1990, Vol. 18, No. 4, page 1058, | | |
| entire document. | | |

X Further documents are listed in the continuation of Box C.

See patent family annex.

| | | | |
|-----|---|-----|--|
| • | Special categories of cited documents: | | |
| "A" | document defining the general state of the art which is not considered to be of particular relevance | "T" | later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention |
| "E" | earlier document published on or after the international filing date | "X" | document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| "L" | document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "Y" | document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "O" | document referring to an oral disclosure, use, exhibition or other means | "&" | document member of the same patent family |
| "P" | document published prior to the international filing date but later than the priority date claimed | | |

Date of the actual completion of the international search

Date of mailing of the international search report

21 OCT 1999

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Authorized officer

V. RYAN

Telephone No. (703) 308-0196

JOYCE BRIDGERS
LEGAL SPECIALIST
CAL MATRIX
JAB

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US99/11585

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| A | EL-SHERBEINI, M. et al. Cloning and Expression of <i>Staphylococcus aureus</i> and <i>Streptococcus pyogenes</i> murD genes encoding uridine diphosphate N-acetylmuramoyl-L-alanine:D-glutamate ligases. <i>Gene</i> . 1998, Vol. 210, pages 117-125. | 1-14 |
| A,P | US 5,929,045 A (WALLIS et al) 27 July 1999. See entire document. | 1-14 |
| A | BOUHSS, A. et al. Invariant Amino Acids in the Mur Peptide Synthetases of Bacterial Peptidoglycan Synthesis and Their Modification by Site-Directed Mutagenesis in the UDP-MurNAc:L-Alanine Ligase from <i>Escherichia coli</i> . <i>Biochemistry</i> . 1997, Vol. 36, No. 39, pages 11556-11563. | 1-14 |

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US99/11585

A. CLASSIFICATION OF SUBJECT MATTER:

IPC (6):

A61K 39/00, 39/02, 39/108; C07H 21/02, 21/04; C12N 15/00, 15/20; C12P 21/06, 21/04

A. CLASSIFICATION OF SUBJECT MATTER:

US CL :

424/184.1, 234.1, 260.1; 435/252.3, 252.34, 320.1, 69.1, 71.1, 71.2, 172.1, 172.3; 536/23.1, 23.2, 23.7

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

| | | |
|--|---|---|
| Applicant's or agent's file reference 20193-PCT | FOR FURTHER ACTION | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |
| International application No. PCT/US99/11585 | International filing date (day/month/year) 26 MAY 1999 | Priority date (day/month/year) 29 MAY 1998 |
| International Patent Classification (IPC) or national classification and IPC Please See Supplemental Sheet. | | |
| Applicant MERCK & CO. INC. | | |

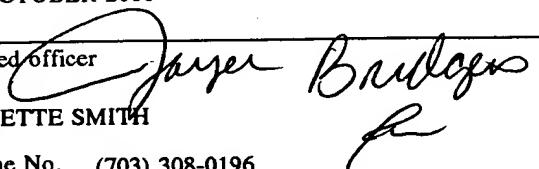
1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

| | |
|--|---|
| Date of submission of the demand 16 DECEMBER 1999 | Date of completion of this report 18 OCTOBER 2000 |
| Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 | Authorized officer LYNETTE SMITH  |
| Facsimile No. (703) 305-3230 | Telephone No. (703) 308-0196 |

I. Basis of the report

1. With regard to the elements of the international application:*

 the international application as originally filed the description:

pages 1-26, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of _____

 the claims:

pages 27-29, as originally filed

pages NONE, as amended (together with any statement) under Article 19

pages NONE, filed with the demand

pages NONE, filed with the letter of _____

 the drawings:

pages 1-2, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of _____

 the sequence listing part of the description:

pages 1-3, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

 the language of a translation furnished for the purposes of international search (under Rule 23.1(b)). the language of publication of the international application (under Rule 48.3(b)). the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

 contained in the international application in printed form. filed together with the international application in computer readable form. furnished subsequently to this Authority in written form. furnished subsequently to this Authority in computer readable form. The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished. The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. The amendments have resulted in the cancellation of: the description, pages NONE the claims, Nos. NONE the drawings, sheets/fig NONE5. This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. statement**

| | | |
|-------------------------------|--------------------|-----|
| Novelty (N) | Claims <u>1-14</u> | YES |
| | Claims <u>NONE</u> | NO |
| Inventive Step (IS) | Claims <u>1-14</u> | YES |
| | Claims <u>NONE</u> | NO |
| Industrial Applicability (IA) | Claims <u>1-14</u> | YES |
| | Claims <u>NONE</u> | NO |

2. citations and explanations (Rule 70.7)

Claims 1-14 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest the murD protein and polynucleotide from *Pseudomonas aeruginosa*.

----- NEW CITATIONS -----
NONE

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 1-14 are objected to as lacking clarity under PCT Rule 66.2(a)(v) because practice of the claimed invention is not adequately described in writing, as required under PCT Rule 5.1(a)(iii), for the reasons set forth in the following paragraph.

The claimed protein is not supported by either a specific and substantial asserted utility or a well established utility because the description fails to assert any utility for the protein and neither the description as filed nor any art of record disclose or suggest any activity for the protein such that any utility would be well established for the protein.

The description is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 5 because it fails to adequately enable practice of the claimed invention because: The description discloses the murD protein having the amino acid sequence of SEQ ID NO 2 and the polynucleotide of SEQ ID NO 1. The description, however, does not disclose a utility or a description of the chemical, physical, or biological properties for the protein.

Claims 1-14 are objected to as lacking clarity under PCT Rule 66.2(a)(v) because practice of the claimed invention is not enabled as required under PCT Rule 5.1(a) for the reasons set forth in the immediately preceding paragraph.

Since the claimed invention is not supported by a specific asserted utility or a well established utility for the reasons set forth above, one skilled in the art would not know how to use the claimed invention so that it would operate as intended without undue experimentation.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

CLASSIFICATION:

The International Patent Classification (IPC) and/or the National classification are as listed below:

IPC(7): A61K 39/00, 39/02, 39/108; C07H 21/02, 21/04; C12N 15/00, 15/20; C12P 21/06, 21/04 and US Cl.: 424/184.1, 234.1, 260.1; 435/252.3, 252.34, 320.1, 69.1, 71.1, 71.2, 172.1, 172.3; 536/23.1, 23.2, 23.7

I. BASIS OF REPORT:

5. (Some) amendments are considered to go beyond the disclosure as filed:

NONE